WHAT IS CLAIMED IS:

1. A pharmaceutical composition for treating a disease associated with one or more self-molecules present non-physiologically in a subject, the composition comprising:

(a) an immune modulatory nucleic acid comprising a hexamer region of the formula 5'-Purine-Pyrimidine-[X]-[Y]-Pyrmidine-Pyrimidine-3', wherein X and Y are any naturally occurring or synthetic nucleotides except that X and Y cannot be cytosine-guanine; and

(b) a pharmaceutically acceptable carrier.

2. The composition of claim 1, wherein the immune modulatory nucleic acid further comprises a polyG region linked 5' or 3' to the hexamer region.

3. The composition of claim 1, wherein the immune modulatory nucleic acid further comprises a first polyG region linked 5' to the hexamer region and a second polyG region linked 3' to the hexamer region.

4. The composition of claim 1, wherein the immune modulatory nucleic acid is in a sterile vial.

5. The composition of claim 1, wherein the immune modulatory nucleic acid is less than about 45 nucleotides in length.

6. The composition of claim 1, wherein the immune modulatory nucleic acid further comprises a polynucleotide region encoding self-protein(s), -polypeptide(s) or -peptide(s).

7. An nucleic acid composition comprising:

a nucleic acid vector having at least one cytosine to non-cytosine substitution within a CpG motif, wherin the CpG motif is of the formula 5'-purine-pyrimidine-C-G-pyrimidine-pyrimidine-3' or 5'-purine-purine-C-G-pyrimidine-pyrimidine-3', and wherein the cytosine to non-cytosine substitution is within the CpG dinucleotide.

8. The nucleic acid composition of claim 7, wherein the CpG motif is of the formula 5'-purine-pyrimidine-C-G-pyrimidine-pyrimidine-3'.

9. The composition of claim 7, wherein the cytosine to non-cytosine substitution is cytosine to guanine.

10. The composition of claim 7, wherein the nucleic acid vector has a plurality of cytosine to non-cytosine substitutions.

11. A method for treating a disease in a subject associated with one or more self-molecules present non-physiologically in the subject, the method comprising:

administering to the subject an immune modulatory nucleic acid comprising a hexamer region of the formula 5'-Purine-Pyrimidine-[X]-[Y]-Pyrmidine-Pyrimidine-3', wherein X and Y are any naturally occurring or synthetic nucleotides except that X and Y cannot be cytosine-guanine.

12. The method of claim 11, wherein the immune modulatory nucleic acid further comprises a polyG region linked 5' or 3' to the hexamer region.

13. The method of claim 11, wherein the immune modulatory nucleic acid further comprises a first polyG region linked 5' to the hexamer region and a second polyG region linked 3' to the hexamer region.

14. The method of claim 11, wherein the disease is an autoimmune disease.

15. The method of claim 14, wherein the disease is multiple sclerosis.

16. The method of claim 14, wherein the disease is rheumatoid arthritis.

17. The method of claim 14, wherein the disease is insulin dependent diabetes mellitus.

18. A method for treating a disease in a subject associated with one or more self-molecules present non-physiologically in the subject, the method comprising:

administering to the subject an immune modulatory nucleic acid comprising a hexamer region of the formula 5'-Purine-Purine-[X]-[Y]-Pyrmidine-Pyrimidine-3'; wherein X and Y are any naturally occurring or synthetic nucleotides except that X and Y cannot be cytosine-guanine.

19. The method of claim 18, wherein the immune modulatory nucleic acid further comprises a polyG region linked 5' or 3' to the hexamer region.

20. The method of claim 18, wherein the immune modulatory nucleic acid further comprises a first polyG region linked 5' to the hexamer region and a second polyG region linked 3' to the hexamer region.

21. The method of claim 18, wherein the disease is an autoimmune disease.

22. The method of claim 21, wherein the disease is multiple sclerosis.

23. The method of claim 21, wherein the disease is rheumatoid arthritis.

24. The method of claim 21, wherein the disease is insulin dependent diabetes mellitus.